

LAC-2006-05 IPv6 HD Ratio

IPv6 HD Ratio Modification

Proposal

Item 2.8 of the policy in force (Policy for the Allocation and Assignment of IPv6 Addresses) states that the way to measure the efficiency of address assignment in view of a new allocation (subsequent allocation) is to utilize Host Density Ratio (HD Ratio, RFC 3194).

Item 5.2.1 establishes that:

"Subsequent allocation will be provided when an organization (ISP/LIR) satisfies the evaluation threshold of past address utilization in terms of the number of sites in units of /48 assignments. The HD- Ratio [RFC 3194] is used to determine the utilization thresholds that justify the allocation of additional address as described below."

Item 5.2.2 establishes the HD Ratio value in force:

"The HD-Ratio value of 0.8 is adopted as indicating an acceptable address utilization for justifying the allocation of additional address space."

If we consider that the initial allocation established by the policy is a /32 and if, in order to make a new allocation to the same LIR, we utilize an HD Ratio of 0.8, the evaluation threshold of past address utilization is satisfied with an efficient utilization of 10.9% (approximately 6500 utilized out of the 65536 /48s available in a /32). If we were to apply the same value to a /20, efficient utilization would drop to 2.1%.

Therefore, we propose to modify the HD Ratio value from 0.8 to 0.94 in order to increase efficiency levels.

By way of an example, with an HD Ratio of 0.94 the utilization level required for the allocation of an additional /32 increases from the abovementioned 10.9% to 51.4%